

IN THE CLAIMS

1. (Cancelled)

SUB
C.7

2. (Currently amended) The MIS device of Claim 14, further comprising a gate adjacent to said first insulative layer and said second insulative layer within said trench.

3. (Previously amended) The MIS device of Claim 2, wherein said gate comprises polysilicon.

B1

4. (Currently amended) ~~The MIS device of Claim 1, further including~~ A metal-insulator-semiconductor (MIS) device, comprising:
a semiconductor substrate defining a trench extending into said substrate from a surface of said substrate;
a source region of a first conductivity type adjacent to a sidewall of said trench and to said surface;
a body region of a second conductivity type opposite to said first conductivity type adjacent to said source region and to said sidewall;
a drain region of said first conductivity type adjacent to said body region and to said sidewall;
wherein said trench is lined with a first insulative layer along a portion of said sidewall that abuts said body region and wherein said trench is lined with a second deposited insulated layer along said bottom portion of said trench.

Serial No.: 09/927,320

Examiner: Ortiz, Edgardo
Art Unit: 2815

Sub C1
said second insulative layer being in contact with said first insulative layer,
whereby formation of said second insulative layer does not introduce
substantial stress in said substrate; and

a high conductivity region of said first conductivity type in said drain region adjacent to at least said bottom portion of said trench.

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5. (Currently amended) The MIS device of Claim 14, wherein said first insulative layer comprises an oxide.

6. (Currently amended) The MIS device of Claim 14, wherein said second insulative layer comprises an oxide.

7. (Currently amended) The MIS device of Claim 14, wherein said second insulative layer is a multi-layer insulative layer.

8. (Currently amended) The MIS device of Claim 14, wherein said MIS device is a MOSFET.

9. (Cancelled)

10. (Currently amended) The trench-gate device of Claim 911, wherein said gate comprises polysilicon.

Serial No.: 09/927,320

- 3 -

Examiner: Ortiz, Edgardo
Art Unit: 2815

11. (Currently amended) ~~The trench-gate device of Claim 9,~~

~~further including A trench-gate device, comprising:~~

~~a semiconductor substrate defining a trench extending into said substrate from a surface of said substrate;~~

~~a source region of a first conductivity type adjacent to a sidewall of said trench and to said surface;~~

~~a body region of a second conductivity type opposite to said first conductivity type adjacent to said source region and to said sidewall;~~

~~a drain region of said first conductivity type adjacent to said body region and to said sidewall;~~

~~wherein said trench is lined with a first insulative layer along a portion of said sidewall that abuts said body region and wherein said trench is lined with a second deposited insulated layer along said bottom portion of said trench, said second insulative layer being in contact with said first insulative layer and said second insulative layer being thicker than said first insulative layer; whereby formation of said second insulative layer does not introduce substantial stress in said substrate;~~

~~a gate adjacent to said first insulative layer and said second insulative layer within said trench; and~~

~~a high conductivity region of said first conductivity type in said drain region adjacent to at least said bottom portion of said trench.~~

Serial No.: 09/927,320

- 4 -

Examiner: Ortiz, Edgardo
Art Unit: 2815

Sub 7
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12. (Currently amended) The trench-gate device of Claim 911,
wherein said first insulative layer comprises an oxide.

13. (Currently amended) The trench-gate device of Claim 911,
wherein said second insulative layer comprises an oxide.

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14. (Currently amended) The trench-gate device of Claim 911,
wherein said second insulative layer is a multi-layer insulative layer.

15. (Cancelled)

16. (Currently amended) ~~The trench-gate device of Claim 15,~~
~~further including A trench-gate device, comprising:~~

a semiconductor substrate defining a trench extending into said
substrate from a surface of said substrate;

a source region of a first conductivity type adjacent to a sidewall of said
trench and to said surface;

a body region of a second conductivity type opposite to said first
conductivity type adjacent to said source region and to said sidewall;

a drain region of said first conductivity type adjacent to said body region
and to said sidewall;

a first insulative layer lining said trench along a portion of said sidewall
that abuts said body region;

Serial No.: 09/927,320

Examiner: Ortiz, Edgardo
Art Unit: 2815

Sub C1
a second deposited insulated layer lining said trench along a bottom portion of said trench, said second insulative layer being thicker than said first insulative layer and said second insulative layer being in contact with said first insulative layer;

wherein a thickness of a transition insulative layer at the juncture of said first insulative layer and said second insulative layer is not less than a thickness of said first insulative layer;

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a gate adjacent to said first insulative layer and said second insulative layer within said trench; and

a high conductivity region of said first conductivity type in said drain region adjacent to at least said bottom portion of said trench.

17. (Cancelled)

18. (Currently amended) ~~The trench-gate device of Claim 17,~~
further including A trench-gate device, comprising:

a semiconductor substrate defining a trench extending into said substrate from a surface of said substrate;

a source region of a first conductivity type adjacent to a sidewall of said trench and to said surface;

a body region of a second conductivity type opposite to said first conductivity type adjacent to said source region and to said sidewall;

Serial No.: 09/927,320

- 6 -

Examiner: Ortiz, Edgardo
Art Unit: 2815

Sub C1
a drain region of said first conductivity type adjacent to said body region and to said sidewall;

a first insulative layer lining said trench along a portion of said sidewall that abuts said body region;

B'
a second deposited insulated layer lining said trench along a bottom portion of said trench, said second insulative layer being thicker than said first insulative layer and said second insulative layer being in contact with said first insulative layer, whereby formation of said second insulative layer does not introduce substantial stress into said substrate;

wherein a width of said trench at a vertical midpoint of said second insulative layer is not greater than a width of said trench adjacent to said body region;

a gate adjacent to said first insulative layer and said second insulative layer within said trench; and

a high conductivity region of said first conductivity type in said drain region adjacent to at least said bottom portion of said trench.

19. - 29. (Withdrawn)

30. (Currently amended) The MIS device of Claim 44, wherein the first insulative layer is thermally grown.

B' SUB C.7 31. (Currently amended) The MIS-trench-gate device of Claim
911, wherein the first insulative layer is thermally grown.

Serial No.: 09/927,320

- 8 -

Examiner: Ortiz, Edgardo
Art Unit: 2815